SALES DBMS

TEAM MEMBERS

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INTRODUCTION

PROJECT: Sales Database System

GOAL: Build a reliable database system for online stores.

FEATURES: Tracks the entire sales process—including customers, inventory, orders, and finances.

DESİGN: Connects 10 key data categories (like Users and Products) to ensure smooth operations.

FOUNDATİON: Built to be accurate, organized, and scalable for real-world use.

GİTHUB LİNK: https://github.com/sinemkcr10/sales-dbms-sql-database

CREATİNG TABLES:

CREATE TABLE Customer
(customer_id INT GENERATED BY
 DEFAULT AS IDENTITY PRIMARY KEY,
fname VARCHAR(255),
 lname VARCHAR(255),
 e_mail VARCHAR(255)
);

CREATE TABLE category
 (category_id INT GENERATED
BY DEFAULT AS IDENTITY PRIMARY
KEY,
name VARCHAR(255));

CREATE TABLE Seller
(seller_id INT GENERATED BY
DEFAULT AS IDENTITY PRIMARY
KEY,
company_name VARCHAR(255),
e_mail VARCHAR(255),
phone VARCHAR(255),
address VARCHAR(255));

address

⚤ ◆ # address_id		int8
◇ customer_id		int8
◇ street		varchar
◇ city		varchar
◇ post_code		int8

CREATE TABLE address

(address_id INT GENERATED BY
DEFAULT AS IDENTITY PRIMARY KEY,
customer_id INT REFERENCES
 "Customer"(customer_id),
 street VARCHAR(255),
city VARCHAR(255),
 post_code INT);

Product

⚤ ◆ # product_id		int8
◆ product_name		varchar
◆ describtion		varchar
◆ price		numeric
◇ stock		int4
◇ seller_id		int8
◇ category_id		int8

CREATE TABLE Product
(product_id INT GENERATED BY
DEFAULT AS IDENTITY PRIMARY KEY,
product_name   VARCHAR(255),
description   VARCHAR,
price   NUMERIC,
stock   INTEGER,
seller_id INT REFERENCES
"Seller"(seller_id),
category_id INT REFERENCES
category(category_id));

Product_Attirube

⚤ ◆ # attirube_id		int8
◇ 👆 name		varchar
◇ value		varchar
◇ product_id		int8

CREATE TABLE Product_Attribute
(attribute_id INT GENERATED BY
DEFAULT AS IDENTITY PRIMARY KEY,
name   VARCHAR(255),
value   VARCHAR(255),
product_id INT REFERENCES
"Product"(product_id));

Order

⚲ ◆ #	order_id	int8
◇	customer_id	int8
◇	order_date	date
◇	address_id	int8
◇	order_status_id	int8
◇	total_amount	numeric

order_item

⚲ ◆ #	item_id	int8
◇	order_id	int8
◇	product_id	int8
◇	quantity	int2
◇	unit_price	numeric

payment

⚲ ◆	payment_id	int4
◆	order_id	int4
◆	amount	numeric
◇	payment_date	timestamptz
◇ 🔗	transaction_id	varchar
◆	payment_status	varchar
◆	payment_method	varchar

CREATE TABLE Order

(order_id   INT GENERATED BY DEFAULT

AS IDENTITY   PRIMARY KEY,

 customer_id INT REFERENCES

"Customer"(customer_id),

order_date DATE DEFAULT CURRENT_DATE,

 address_id   INT REFERENCES address

(address_id),

order_status_id INT REFERENCES

order_status(order_status_id),

total_amount NUM);

CREATE TABLE order_item
 (item_id INT GENERATED BY
DEFAULT AS IDENTITY PRIMARY
KEY,
order_id INT REFERENCES
"Order"(order_id),
product_id INT REFERENCES
Product"(product_id),
quantity INT,
unit_price NUM);

CREATE TABLE payment
(payment_id   INTEGER
GENERATED BY DEFAULT AS
IDENTITY PRIMARY
KEY, order_id INT REFERENCES
"Order"(order_id),
Amount   NUM   ,
payment_date DATE DEFAULT
CURRENT_DATE,
 transaction_id   VARCHAR(255),
payment_status   VARCHAR(50)
, payment_method
VARCHAR(50));

```sql
CREATE TABLE order_status
(order_status_id INT
GENERATED BY DEFAULT AS
IDENTITY PRIMARY KEY,
created_at DATE DEFAULT
CURRENT_DATE,
    status_name VARCHAR(255));
```

ADDING DATA TO TABLES:

custo... i...	fname varchar	lname varchar	e_mail varchar
1	Tom	Cruse	TomCruse@gmail.com
2	Bruce	Wayne	Batman@gmail.com
3	Antoni	Hopkins	Hannibal@gmail.com
4	Mozart	Amadeus	MozartWAmadeus@gmail.com
5	Luke	Cage	Force@gmail.com

INSERT INTO Customer (customer_id, fname, lname, e_mail) VALUES

(1, 'Tom', 'Cruse', 'TomCruse@gmail.com'),

(2, 'Bruce', 'Wayne', 'Batman@gmail.com'),

(3, 'Antoni', 'Hopkins', 'Hannibal@gmail.com'),

(4, 'Mozart', 'Amadeus', 'MozartWAmadeus@gmail.com'),

(5, 'Luke', 'Cage', 'Force@gmail.com');

sell... i...	company_name varchar	e_mail varchar	phone varchar	address varchar
1	ABB	ABB@gmail.com	5338647722	Mersin/TURKEY
2	SK	SK@gmail.com	5337452112	Manisa/TURKEY
3	BS	BS@gmail.com	5334789654	Istanbul/TURKEY
4	UG	UG@gmail.com	5332245687	Antalya/TURKEY

INSERT INTO Seller (seller_id, company_name, e_mail, phone, address) VALUES

(1, 'ABB', 'ABB@gmail.com', '5338647722', 'Mersin/TURKEY'),

(2, 'SK', 'SK@gmail.com', '5337452112', 'Manisa/TURKEY'),

(3, 'BS', 'BS@gmail.com', '5334789654', 'Istanbul/TURKEY'),

(4, 'UG', 'UG@gmail.com', '5332245687', 'Antalya/TURKEY');

	catego... i...	name varchar
	1	Electronics
	2	Books
	3	Clothing
	4	Home Appliances

```
INSERT INTO category (category_id, name)
VALUES
(1, 'Electronics'),
(2, 'Books'),
(3, 'Clothing'),
(4, 'Home Appliances');
```

	prod... i...	product_name varchar	price numeric	stock int4	sell... i...	catego... i...	description varchar
	1	Smartphone X12	899.99	50	1	1	High-end smartphone with OLED displa
	2	Wireless Headphones	199.50	120	1	1	Noise cancelling over-ear headphones
	3	Mystery Novel	14.99	200	2	2	Top-selling mystery thriller book
	4	Cotton T-Shirt	9.99	500	3	3	100% cotton unisex t-shirt
	5	Microwave Oven	129.99	30	4	4	Digital microwave oven 900W

```
INSERT INTO Product (product_id, product_name, description, price, stock, seller_id,
category_id) VALUES
(1, 'Smartphone X12', 'High-end smartphone with OLED display', 899.99, 50, 1, 1),
(2, 'Wireless Headphones', 'Noise cancelling over-ear headphones', 199.50, 120, 1, 1),
(3, 'Mystery Novel', 'Top-selling mystery thriller book', 14.99, 200, 2, 2),
(4, 'Cotton T-Shirt', '100% cotton unisex t-shirt', 9.99, 500, 3, 3),
(5, 'Microwave Oven', 'Digital microwave oven 900W', 129.99, 30, 4, 4);
```

attribut... i... v	name varchar	value varchar	prod... i...
1	Color	Black	1
2	Storage	128GB	1
3	Battery	4000mAh	1
4	Color	White	2
5	Weight	250g	2
6	Pages	420	3
7	Size	L	4
8	Material	Cotton	4
9	Power	900W	5

INSERT INTO "Product_Attribute" (attribute_id, name,

value, product_id) VALUES

(1, 'Color', 'Black', 1), (2, 'Storage', '128GB', 1),

(3, 'Battery', '4000mAh', 1), (4, 'Color', 'White', 2)

, (5, 'Weight', '250g', 2), (6, 'Pages', '420', 3),

(7, 'Size', 'L', 4), (8, 'Material', 'Cotton', 4),

(9, 'Power', '900W', 5);

addr... i... v	custo... i...	street varchar	city varchar	post_c... i...
1	1	Main Street 12	Mersin	33000
2	2	Wayne Manor 1	Gotham	10001
3	3	Elm Road 45	London	10000
4	4	Amadeus Str. 9	Vienna	1010
5	5	Cage District 7	New York	90001

INSERT INTO address (address_id, customer_id, street, city, post_code) VALUES (1, 1, 'Main Street 12', 'Mersin', 33000), (2, 2, 'Wayne Manor 1', 'Gotham', 10001), (3, 3, 'Elm Road 45', 'London', 10000), (4, 4, 'Amadeus Str. 9', 'Vienna', 1010), (5, 5, 'Cage District 7', 'New York', 90001);

order_status... i...	created_at timestamptz	status_name varchar
1	2025-12-19 12:05:08.231007+00	Pending
2	2025-12-19 12:05:08.231007+00	Processing
3	2025-12-19 12:05:08.231007+00	Shipped
4	2025-12-19 12:05:08.231007+00	Delivered
5	2025-12-19 12:05:08.231007+00	Cancelled

INSERT INTO order_status (order_status_id, created_at, status_name) VALUES (1, NOW(), 'Pending'), (2, NOW(), 'Processing'), (3, NOW(), 'Shipped'), (4, NOW(), 'Delivered'), (5, NOW(), 'Cancelled');

ord... i...	custo... i...	order_date date	addr... i...	order_status... i...	total_amount numeric
1	1	2025-12-01	1	1	1099.49
2	2	2025-12-03	2	2	14.99
3	3	2025-12-05	3	3	219.49
4	4	2025-12-07	4	4	9.99
5	5	2025-12-10	5	1	129.99

INSERT INTO "Order" (order_id, customer_id, order_date, address_id, order_status_id, total_amount) VALUES
(1, 1, '2025-12-01', 1, 1, 1099.49), (2, 2, '2025-12-03', 2, 2, 14.99), (3, 3, '2025-12-05', 3, 3, 219.49), (4, 4, '2025-12-07', 4, 4, 9.99), (5, 5, '2025-12-10', 5, 1, 129.99);

ite... i...	ord... i...	prod... i...	quantity int2	unit_price numeric
1	1	1 → 1	899.99
2	1	2 → 1	199.50
3	2	3 → 1	14.99
4	3	2 → 1	199.50
5	3	1 → 1	899.99
6	4	4 → 1	9.99
7	5	5 → 1	129.99

View referencing record

```sql
INSERT INTO order_item
(item_id, order_id, product_id, quantity, unit_price)
VALUES
(1, 1, 1, 1, 899.99), (2, 1, 2, 1, 199.50), (3, 2, 3, 1, 14.99),
(4, 3, 2, 1, 199.50), (5, 3, 1, 1, 899.99), (6, 4, 4, 1, 9.99),
(7, 5, 5, 1, 129.99);
```

paym... i...	..	amo... num...	payment_date timestamptz	transaction_id varchar	payment_status varchar	payment_method
1	→	1099.49	2025-12-01 10:45:00+00	TRN001	Completed	Credit Card
2	→	14.99	2025-12-03 15:22:00+00	TRN002	Completed	PayPal
3	→	219.49	2025-12-05 18:41:00+00	TRN003	Completed	Credit Card
4	→	9.99	2025-12-07 20:00:00+00	TRN004	Completed	Debit Card
5	→	129.99	2025-12-10 13:05:00+00	TRN005	Pending	Credit Card

```sql
INSERT INTO payment (payment_id, order_id, amount, payment_date, transaction_id,
payment_status, payment_method) VALUES
 (1, 1, 1099.49, '2025-12-01 10:45:00', 'TRN001', 'Completed', 'Credit Card'), (2, 2, 14.99,
'2025-12-03 15:22:00', 'TRN002', 'Completed', 'PayPal'), (3, 3, 219.49, '2025-12-05 18:41:00',
'TRN003', 'Completed', 'Credit Card'), (4, 4, 9.99, '2025-12-07 20:00:00', 'TRN004',
'Completed', 'Debit Card'), (5, 5, 129.99, '2025-12-10 13:05:00', 'TRN005', 'Pending', 'Credit
Card');
```

```
UPDATE Customer
SET e_mail = 'TomMissionImpossible@gmail.com'
WHERE customer_id = 1;
```

	customer_id	first_name	last_name	e_mail
Table: CUSTOMER				
BEFORE	1	Tom	Cruise	tom@hollywood.com
AFTER	1	Tom	Cruise	TomMissionImpossible@gmail.com

UPDATE Product SET stock = stock + 131
WHERE product_id = 2;

	product_id	product_name	price	stock
Table: PRODUCT				
BEFORE	2	Smart Watch	1500.00|	20
AFTER	2	Smart Watch	1500.00|	151

UPDATE: Modifies data inside a specific column/cell.

- UPDATE category
SET name = 'Electronic Devices'
WHERE category_id = 1;

- UPDATE Product
SET price = 849.99,
    stock = 45
WHERE product_id = 1;

- UPDATE "Order"
SET order_status_id =2
WHERE order_id = 1;

- DELETE FROM seller WHERE seller_id = 3;

O⌐ sell... i... ⌄	company_name varchar	e_mail varchar	phone varchar	address varchar
1	ABB	ABB@gmail.com	5338647722	Mersin/TURKEY
2	SK	SK@gmail.com	5337452112	Manisa/TURKEY
3	BS	BS@gmail.com	5334789654	Istanbul/TURKEY
4	UG	UG@gmail.com	5332245687	Antalya/TURKEY

- With this code structure, the third line was deleted.

- DELETE FROM order_status
  WHERE status_name IN ('Pending', 'Delivered');

O⌐ order_status... i... ⌄	created_at timestamptz ⌄	status_name varchar ⌄
1	2025-12-19 12:05:08.231007+00	Pending
2	2025-12-19 12:05:08.231007+00	Processing
3	2025-12-19 12:05:08.231007+00	Shipped
4	2025-12-19 12:05:08.231007+00	Delivered
5	2025-12-19 12:05:08.231007+00	Cancelled

-With this code, status_names containing "Pending" and "Delivered" were deleted.

QUERİES:

SELECT product_name, stock
FROM Product
WHERE stock > 100;

product_name	stock
Wireless Headphones	251
Mystery Novel	200
Cotton T-Shirt	500

SELECT p.product_name, c.name AS
category
FROM Product p
JOIN category c ON p.category_id =
c.category_id;

product_name	category
Smartphone X12	Electronics
Mystery Novel	Books
Cotton T-Shirt	Clothing
Microwave Oven	Home Appliances
Wireless Headphones	Electronics

SELECT o.order_id, c.fname, c.lname,
o.total_amount
FROM "Order" o JOIN Customer c ON
o.customer_id = c.customer_id;

order_id	fname	lname	total_amount
1	Tom	Cruse	1099.49
2	Bruce	Wayne	14.99
3	Antoni	Hopkins	219.49
4	Mozart	Amadeus	9.99
5	Luke	Cage	129.99

SELECT oi.order_id, p.product_name, oi.quantity
FROM order_item oi
JOIN Product p ON oi.product_id = p.product_id;

order_id	product_name	quantity
1	Smartphone X12	1
1	Wireless Headphones	1
2	Mystery Novel	1
3	Wireless Headphones	1
3	Smartphone X12	1
4	Cotton T-Shirt	1
5	Microwave Oven	1

SELECT payment_id, order_id,
amount, payment_status
FROM payment
WHERE payment_status = 'Pending';

payment_id	order_id	amount	payment_status
5	5	129.99	Pending

SELECT product_name, price
FROM Product
ORDER BY price DESC
LIMIT 1;

product_name	price
Smartphone X12	899.99

order_id	fname	lname	payment_method	amount
1	Tom	Cruse	Credit Card	1099.49
2	Bruce	Wayne	PayPal	14.99
3	Antoni	Hopkins	Credit Card	219.49
4	Mozart	Amadeus	Debit Card	9.99
5	Luke	Cage	Credit Card	129.99

SELECT o.order_id, c.fname, c.lname,
p.payment_method, p.amount
FROM "Order" o
JOIN Customer c ON o.customer_id = c.customer_id
JOIN payment p ON o.order_id = p.order_id;

product_name	stock
Smartphone X12	50
Microwave Oven	30

SELECT product_name, stock
FROM Product
WHERE stock < 100;

product_name	price
Smartphone X12	899.99

SELECT product_name, price
FROM Product
ORDER BY price DESC
LIMIT 1;

product_name	company_name	category
Smartphone X12	ABB	Electronics
Wireless Headphones	ABB	Electronics
Mystery Novel	SK	Books
Cotton T-Shirt	BS	Clothing
Microwave Oven	UG	Home Appliances

SELECT p.product_name, s.company_name, c.name
AS category
FROM Product p
JOIN Seller s ON p.seller_id = s.seller_id
JOIN category c ON p.category_id = c.category_id;

order_id	payment_metho	amount
1	Credit Card	1099.49
2	PayPal	14.99
3	Credit Card	219.49
4	Debit Card	9.99
5	Credit Card	129.99

```
SELECT o.order_id, p.payment_method, p.amount
FROM "Order" o
JOIN payment p ON o.order_id = p.order_id;
```

fname	lname	total_orders
Tom	Cruse	1

```
SELECT c.fname, c.lname, COUNT(o.order_id) AS
total_orders
FROM Customer c
JOIN "Order" o ON c.customer_id = o.customer_id
GROUP BY c.fname, c.lname
ORDER BY total_orders DESC
LIMIT 1;
```

product_name	price	company_name
Smartphone X12	899.99	ABB

```
SELECT p.product_name, p.price, s.company_name
FROM Product p
JOIN Seller s ON p.seller_id = s.seller_id
ORDER BY p.price DESC
LIMIT 1;
```

category	total_stock
Electronics	301
Books	200
Clothing	500
Home Appliances	30

SELECT c.name AS category, SUM(p.stock) AS total_stock
FROM category c
JOIN Product p ON c.category_id = p.category_id
GROUP BY c.name;

max_price	min_price
899.99	9.99

SELECT MAX(price) AS max_price, MIN(price) AS min_price
FROM Product;

TABLES:

- Customer
- Order
- Product
- Product_Attrib...
- Seller
- address
- category
- order_item
- order_status
- payment

CUSTOMER

custo... i...	fname varchar	lname varchar	e_mail varchar
1	Tom	Cruse	TomMissionImpossible@gmail.com
2	Bruce	Wayne	Batman@gmail.com
3	Antoni	Hopkins	Hannibal@gmail.com
4	Mozart	Amadeus	MozartWAmadeus@gmail.com
5	Luke	Cage	Force@gmail.com

CATEGORY

catego... i...	name varchar
1	Electronics
2	Books
3	Clothing
4	Home Appliances

ORDER

ord... i...	custo... i...	order_date date	addr... i...	order_status... i...	total_amount numeric
1	1	2025-12-01	1	1	1099.49
2	2	2025-12-03	2	2	14.99
3	3	2025-12-05	3	3	219.49
4	4	2025-12-07	4	4	9.99
5	5	2025-12-10	5	1	129.99

PRODUCT

prod... i...	product_name varchar	price numeric	stock int4	sell... i...	catego... i...	description varchar
1	Smartphone X12	899.99	50	1	1	High-end smartphone with OLED display
2	Wireless Headphones	199.50	382	1	1	Noise cancelling over-ear headphones
3	Mystery Novel	14.99	200	2	2	Top-selling mystery thriller book
4	Cotton T-Shirt	9.99	500	3	3	100% cotton unisex t-shirt
5	Microwave Oven	129.99	30	4	4	Digital microwave oven 900W

PRODUCT_ATTRIBUTES

attribut... i...	name varchar	value varchar	prod... i...
1	Color	Black	1
2	Storage	128GB	1
3	Battery	4000mAh	1
4	Color	White	2
5	Weight	250g	2
6	Pages	420	3
7	Size	L	4
8	Material	Cotton	4
9	Power	900W	5

SELLER

sell... id	company_name varchar	e_mail varchar	phone varchar	address varchar
1	ABB	ABB@gmail.com	5338647722	Mersin/TURKEY
2	SK	SK@gmail.com	5337452112	Manisa/TURKEY
3	BS	BS@gmail.com	5334789654	Istanbul/TURKEY
4	UG	UG@gmail.com	5332245687	Antalya/TURKEY

ADDRESS

addr... id	custo... id	street varchar	city varchar	post_c... id
1	1	Main Street 12	Mersin	33000
2	2	Wayne Manor 1	Gotham	10001
3	3	Elm Road 45	London	10000
4	4	Amadeus Str. 9	Vienna	1010
5	5	Cage District 7	New York	90001

ORDER_ITEM

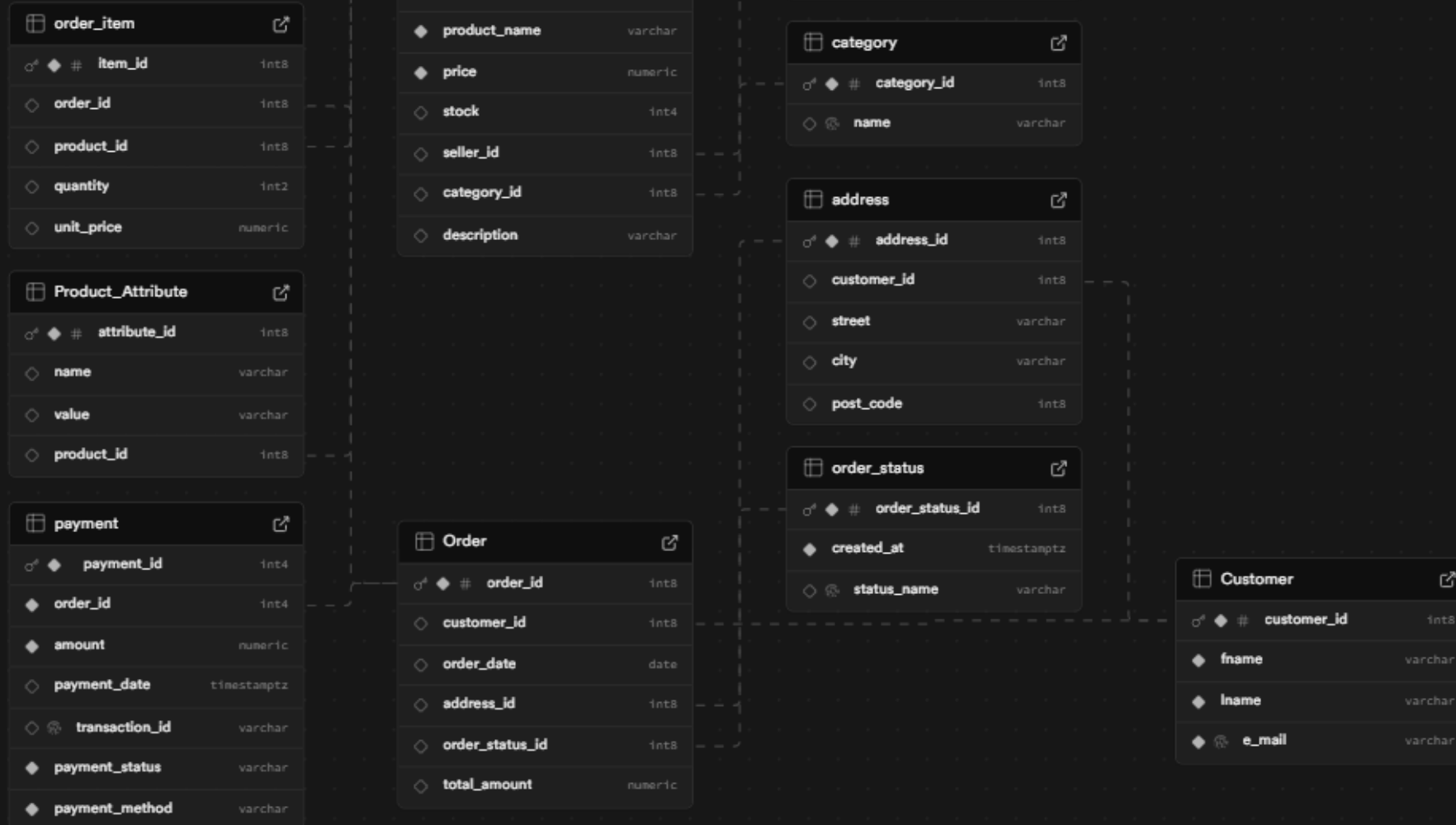| ite... i...	ord... i...	prod... i...	quantity int2	unit_price numeric
1	1 →	1 →	1	899.99
2	1 →	2 →	1	199.50
3	2 →	3 →	1	14.99
4	3 →	2 →	1	199.50
5	3 →	1 →	1	899.99
6	4 →	4 →	1	9.99
7	5 →	5 →	1	129.99

ORDER_STATUS

order_status... i...	created_at timestamptz	status_name varchar
1	2025-12-19 12:05:08.231007+00	Pending
2	2025-12-19 12:05:08.231007+00	Processing
3	2025-12-19 12:05:08.231007+00	Shipped
4	2025-12-19 12:05:08.231007+00	Delivered
5	2025-12-19 12:05:08.231007+00	Cancelled

PAYMENT

paym... i...	amo... num...	payment_date timestamptz	transaction_id varchar	payment_status varchar	payment_method varchar
1	1099.49	2025-12-01 10:45:00+00	TRN001	Completed	Credit Card
2	14.99	2025-12-03 15:22:00+00	TRN002	Completed	PayPal
3	219.49	2025-12-05 18:41:00+00	TRN003	Completed	Credit Card
4	9.99	2025-12-07 20:00:00+00	TRN004	Completed	Debit Card
5	129.99	2025-12-10 13:05:00+00	TRN005	Pending	Credit Card

ER DİAGRAM OF SALES DBMS:

ERD DİAGRAM: